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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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EXAMINER

AGGARWAL, YOGESH K

ART UNIT PAPER NUMBER

2622

DATE MAILED: 05/26/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/994,178

Applicant(s)

IRION ET AL.

Examiner

Yogesh K. Aggarwal

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 03 February 2006.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-8,10-19 and 21-25 is/are pending in the application.
- 4a) Of the above claim(s) 6,7,10-12 and 16 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-5,8,13-15,17-19,21-25 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____

Claim Objections

1. Applicant is advised that should claim 3 be found allowable, claim 25 will be objected to under 37 CFR 1.75 as being a substantial duplicate thereof. When two claims in an application are duplicates or else are so close in content that they both cover the same thing, despite a slight difference in wording, it is proper after allowing one claim to object to the other as being a substantial duplicate of the allowed claim. See MPEP § 706.03(k).

Response to Arguments

2. Applicant's arguments with respect to claims 1-5, 8, 13-15, 17-19 and 21-25 have been considered but are moot in view of the new ground(s) of rejection.

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. Claims 1, 2, 8, 13-15, 17-19 and 21-24 are rejected under 35 U.S.C. 103(a) as being unpatentable over Pelchy (US Patent # 5,857,963) in view of Ito et al. (US Patent # 5,454,366).
[Claims 1, 8, 18]

Pelchy et al. teaches an image pick-up module (figures 1-6), especially for an endoscope, comprising an electronic image sensor (figure 1, CCD imager 17, col. 3 lines 15-20); a single-piece circuit board (TAB imager package 15) which is electrically bonded to said image sensor (17), said circuit board having at least three sections, with a first section and a second section (two top horizontal members 26) extending in spaced relation one to the other and obliquely or

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crosswise to said image sensor and a third section (figure 1, vertical member 25) being arranged between the first and the second sections (col. 3 lines 23-43); at least one cable (36) electrically bonded to an outside surface of said circuit board and leading away from said circuit board (col. 3 lines 43-45); wherein said image sensor (17) is arranged on one end of said circuit board opposite said third section (see figure 1).

Pelchy '963 discloses a first, second and third section but fails to disclose that the circuit board is folded from a planar blank circuit board comprising at least first, second and third sections integrally connected with one another, said third section being arranged between said first and second sections of each blank. However Ito et al. discloses a planar circuit board 40 that is divided into at least three sections namely 40a-40c separated by five folding lines with an image pick up element 31 and a third section 40a being arranged between said first and second sections of each blank (col. 4 lines 20-35, figures 2, 5 and 7).

Therefore taking the combined teachings of Pelchy '963 and Ito, it would be obvious to one skilled in the art at the time of the invention to have been motivated to have used that the circuit board is folded from a planar blank circuit board comprising at least first, second and third sections integrally connected with one another, said third section being arranged between said first and second sections of each blank in order to reduce the length of the circuit board making endoscope to be of short length thus allowing good manipulation and insertion of the endoscope as taught in Ito (col. 2 lines 7-12).

[Claim 2]

Pelchy teaches in figure 1 that said first sections (26) are parallel to one another and third section (25) extends crosswise to said first and second sections (figure 1).

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[Claim 13]

Pelchy '963 discloses wherein an interior of said circuit board is filled with an electrically non-conductive, filling compound like epoxy resin (col. 4 lines 30-39).

[Claims 14, 15, 17]

Pelchy discloses in figure 2 a recess 29 formed on the top surface to accommodate the imager 17 (col. 3 lines 30-32). The imager is read as an electric component contained in the circuit board.

[Claim 19]

Pelchy teaches bonding pads 31-31 mounted on top surface of the horizontal member 26 and connected to vertical member 33 (col. 3 lines 35-42, figures 1 and 2).

[Claim 21]

Ito discloses different sections (discloses a planar circuit board 40 that is divided into at least three sections namely 40a-40c separated by five folding lines with an image pick up element 31 and a third section 40a being arranged between said first and second sections of each blank (col. 4 lines 20-35, figures 2, 5 and 7) that are bent in spaced relation to one another. Pelchy '963 having a first and second section having cable attached and a third section connected to the first and second section on a TAB which is flexible.

[Claims 22]

This is a method claim corresponding to apparatus claims 1 and 21. Therefore claim 22 is analyzed and rejected based upon apparatus claims 1 and 21 respectively.

[Claim 23]

Pelchy '963 discloses wherein an interior of said circuit board is filled with an electrically non-conductive, filled compound like epoxy resin (col. 4 lines 30-39).

[Claim 24]

See Examiner's notes regarding rejection of claim 1.

5. Claims 3-5 and 25 are rejected under 35 U.S.C. 103(a) as being unpatentable over Pelchy '963, Ito et al. (US Patent # 5,454,366) and further in view of Pelchy (US Patent # 5,754,313).

[Claim 3]

Pelchy '963 discloses the claimed limitations of claim 1 but fails to disclose wherein the third section has a substantially V-shaped configuration. However Pelchy '313 discloses hybrid boards 61 and 62 that are inclined inwardly from the imager package toward the transmission wires 33-33 (col. 5 lines 52-56, figure 6) in a substantially V-shape in order to protect the electrical components located at the bottom of the package and the need of a substrate is eliminated as taught in Pelchy '313 (col. 5 lines 63-67).

Therefore taking the combined teachings of Pelchy '963 and Pelchy '313, it would be obvious to one skilled in the art at the time of the invention to have been motivated to have used hybrid boards 61 and 62 that are inclined inwardly from the imager package toward the transmission wires 33-33 in a substantially V-shape in order to protect the electrical components located at the bottom of the package and the need of a substrate is eliminated as taught in Pelchy '313 (col. 5 lines 63-67).

[Claim 4]

Pelchy '313 teaches wherein the V-shaped hybrid boards have a straight-line prolongation while Pelchy '963 teach a first and second section. Therefore taking the combined teachings, a third section having a V-shaped hybrid board will have a straight-line prolongation in relation to the first and second section.

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[Claim 5]

Pelchy '313 teaches V-shaped hybrid boards and Pelchy '963 teach first and second sections that are parallel to each other.

[Claim 25]

See claim 3.

Conclusion

6. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Yogesh K. Aggarwal whose telephone number is (571) 272-7360. The examiner can normally be reached on M-F 9:00AM-5:30PM.

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7. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, David Ometz can be reached on (571)-272-7593. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

8. Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

YKA

May 18, 2006

A handwritten signature in black ink, appearing to read 'David Ometz', with a long horizontal line extending from the end of the signature.

DAVID OMETZ
SUPERVISORY PATENT EXAMINER